

**ABSTRACT**

The invention provides putative "drugable" protein targets and actively binding ligands identified in an efficient and reproducible process by determining the affinity of protein mixtures to libraries of ligand compounds of defined size and composition. The libraries are used to isolate and identify previously unknown corresponding protein-ligand binding pairs from a mixture of proteins and a library of compounds, and are particularly useful to identify differentially selective protein-ligand binding pairs, for example, representing a single physiological state or several varied but related states, such as disease versus normal conditions. The invention also provides processes for identifying such protein-ligand binding pairs.